

REMARKS

Applicants thank the Examiner for the thorough consideration given the present invention. Claims 1-26 are pending in the present application. Claims 1, 12, 13, 14, 25, and 26 are independent claims.

35 U.S.C. §112 Rejection

Claims 8 and 9 – 11 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action states that the limitations “second input chromaticity range” and “second output chromaticity range” in claim 8, and the limitations “third input chromaticity” and “third output chromaticity” in claim 9 are not supported by the specification. Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Examiner Interview

Applicants’ representative conducted a telephone interview with the Examiner on December 8, 2008 to discuss this matter. During the interview, Applicants’ representative explained that the terms “second” and “third” were used as identifiers for the sake of convenience (so as not to have to re-type, each time, the full description of each chromaticity or chromaticity range. For example, with respect to the “second output chromaticity range” of claim 8, its full description would be a “chromaticity range indicating second color reproduction characteristics data of a hue indicated by the image data converted by said color corrector based on data indicating the second color reproduction characteristics and describing color reproduction characteristics of an original image showing a color tone of a visually-identified image.” The Examiner agreed, based on this rationale and also based on support in the drawings for multiple input chromaticities and chromaticity ranges (see, for example, Figs. 8 and 11), to withdraw these section 112 rejections, as noted in the interview summary of December 16, 2008.

At least in view of the above, Applicants respectfully request reconsideration and withdrawal of this rejection.

Specification Objection

The specification is objected to as not containing the limitations “second input chromaticity range,” “second output chromaticity range,” “third input chromaticity,” or “third output chromaticity,” as recited in claims 8 and 9. Insofar as it pertains to the presently pending claims, this objection is respectfully traversed.

Applicants respectfully submit, in light of their above arguments with respect to the section 112 rejections of claims 8 and 9, that the specification objections should be withdrawn for at least the same reasons. Accordingly, since “second” and “third” are used as identifier terms for subject matter otherwise present and described in the claims, specification, and drawing figures, reconsideration and withdrawal of this objection is respectfully requested.

35 U.S.C. § 103 Rejection – Komatsu and Yamada

Claims 1-4, 12 - 17 and 25-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Application 2000-022978 to Komatsu et al. (“Komatsu”) in view of Japanese Patent 05-061952 to Yamada (“Yamada”). Insofar as it pertains to the presently pending claims, this rejection is respectfully traversed.

Prior Art

Komatsu teaches a method and apparatus for performing color correction involving the compression of high-saturation and highly varied color ranges to facilitate transferring and displaying of images across output devices with different color gamuts. (Abstract). Komatsu specifically teaches compressing a brightness-converted, but still irreproducible, color into the available gamut of reproducible colors. (Para 0006).

Yamada teaches a method of outputting an image on an output device without affecting the color gradation properties of the image. (Abstract). Specifically, Yamada teaches that a color compensator performs color space compression based on the relationship between the color reproduction ranges of input and output devices. (Para 0007).

Claim 1

Independent claim 1 pertains, in part, to a color correction apparatus having a color gamut compressor, such that the gamut compressor “determines a hue of the image data converted by said color corrector, acquires both: an input chromaticity range from the input image signal based on the data describing the color reproduction characteristics, said input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal, and an output chromaticity range based on the data describing the color reproduction characteristics, said output range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color corrector.”

The Office Action admits that Komatsu fails to teach or suggest a gamut compressor that “acquires both: an input chromaticity range from the input image signal based on the data describing the color reproduction characteristics, said input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal, and an output chromaticity range based on the data describing the color reproduction characteristics, said output range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color corrector” and instead relies on Yamada for this teaching.

Applicants respectfully submit that Yamada does not disclose or suggest any means for converting the hue between the input and output image signals. Yamada only discusses performing color space compression “from the relation between the color reproduction range of an input device, and the color reproduction range of an output device.” (Para. 0007). Hue information is not used or altered in Yamada’s compression process, suggesting that the hue has the same value in both the input and output image signals in Yamada. By contrast, the present

invention requires both input and output chromaticity ranges “corresponding to a hue.” For the input chromaticity range it is the hue of the input image signal, whereas for the output chromaticity range it is the hue of image data converted by said color corrector. Applicants respectfully note that, as defined in both independent claim 1 and in the specification, these two hues have different values and are associated with different color spaces. Applicants therefore respectfully submit that, unlike Yamada, the present invention makes color correction to the input image signal so that the hue of the input image signal can be changed along with changes in color space. Applicants respectfully submit that Yamada therefore fails to teach or suggest an “input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal, and an ... output [chromaticity] range indicating said color reproduction characteristics corresponding to the hue of the image data converted by said color corrector” as required by independent claim 1.

Applicants further submit that Komatsu does not remedy the above-discussed deficiencies in the teachings of Yamada. Komatsu only makes color correction to the output image signal for each of the output devices having different color reproduction ranges (Para. 0003) and does not discuss any correction to the input image signal. Applicants therefore respectfully submit that Komatsu takes no corrective action with respect to the color reproduction range of the input image signal, and therefore does not acquire an “input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal” as required by independent claim 1.

Claim 13

Applicants respectfully submit that independent claim 13 pertains to a color correction method that requires, in pertinent part, a gamut compression step that “acquires both: an input chromaticity range from the image data based on the data describing the color reproduction characteristics, said input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal, and an output chromaticity range based on the data describing the color reproduction characteristics, said output range indicating said color

reproduction characteristics corresponding to the hue of the image data converted by said color corrector.”

Applicants note that this limitation is similar to that of independent claim 1 in that both the input and output chromaticity ranges are hue-dependent. Applicants therefore respectfully submit that independent claim 13 is patentable over Komatsu in view of Yamada for at least the same reasons as stated with respect to independent claim 1.

Claim 14

Independent claim 14 pertains to a color correction apparatus that has a “a color gamut compressor that: input acquires an input chromaticity range from the input image signal based on data describing color reproduction characteristics, said input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the input image signal; determines a hue of the color-corrected image signal; output acquires an output chromaticity range based on the data describing the color reproduction characteristics, said output chromaticity range indicating those color reproduction characteristics that correspond to the determined hue of the color-corrected image signal.”

Applicants note that this limitation is similar to that of independent claim 1 in that both the input and output chromaticity ranges are hue-dependent. Applicants therefore respectfully submit that independent claim 14 is patentable over Komatsu in view of Yamada for at least the same reasons as stated with respect to independent claim 1.

Claim 26

Independent claim 26 pertains to a color correction method that requires, in pertinent part, “first acquiring an input chromaticity range from the image data based on the data describing the color reproduction characteristics, said input chromaticity range indicating said color reproduction characteristics corresponding to a hue of the image data, and second acquiring

an output chromaticity range based on the data describing the color reproduction characteristics, said output range indicating said color reproduction characteristics corresponding to the hue of the hue-converted image data.”

Applicants note that this limitation is similar to that of independent claim 14 in that both the input and output chromaticity ranges are hue-dependent. Applicants therefore respectfully submit that independent claim 26 is patentable over Komatsu in view of Yamada for at least the same reasons as stated with respect to independent claim 1.

Claim 12

Independent claim 12 pertains to a color correction apparatus that includes “a saturation conversion means for converting a saturation of an input image signal based on both color adjustment data describing both a hue to be saturation-converted and an amount of adjustment, and color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus.”

The Office Action admits that Komatsu does not teach the saturation conversion means of independent claim 12, and instead relies on Yamada for this teaching. Applicants note that while Yamada does compress the gamma of an input color signal into a gamma within the color reproduction range of the output device, Yamada teaches that only the color reproduction range of the output device and the gamma of the input color signal are used as inputs to the color compressor. (Para. 0018).

By contrast, independent claim 12 requires “color adjustment data describing both a hue to be saturation-converted and an amount of adjustment.” Because Yamada does not teach or suggest using anything other than the color reproduction range of the output device and gamma of the input color signal as inputs to the color compressor (Para. 0018), Applicants respectfully submit that Yamada fails to teach or suggest using “color adjustment data describing both a hue to be saturation-converted and an amount of adjustment” as a basis for saturation conversion as

required by independent claim 12. Applicants further submit that Komatsu is not relied upon, nor can it properly be relied upon, to remedy this deficiency of Yamada.

Claim 25

Independent claim 25 pertains to a color correction apparatus that includes “a saturation converter that converts a saturation of an input image signal based on color adjustment data describing both a hue to be saturation-converted and an amount of adjustment, and color reproduction characteristics data describing color reproduction characteristics of a color image display apparatus.”

Applicants respectfully submit that this limitation is similar to that of independent claim 12 and that therefore Komatsu and Yamada are deficient with respect to independent claim 25 for at least the same reasons as set forth with respect to independent claim 12.

Claims 2-4 and 15 – 17

Applicants respectfully submit that claims 2-4 and 15 - 17 are allowable at least by virtue of their dependency from independent claims 1, 12, 13, and 14. Applicants submit that the arguments made with respect to the above-listed independent claims apply equally to all claims depending therefrom.

Reconsideration

At least for the above reasons, Applicants respectfully submit that Komatsu and Yamada, taken either alone or in combination (assuming the references may be combined, which Applicants do not admit), teach or suggest the claim limitations of independent claims 1, 12, 13, 14, 25, 26 and all claims depending therefrom. Applicants therefore respectfully request reconsideration and withdrawal of this rejection.

35 U.S.C. § 103 Rejection - Iida

Claims 5-11 and 18 - 24 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Komatsu in view of Yamada in further view of U.S. Patent Publication 2003/0164968 by Iida (hereinafter "Iida").

Applicants respectfully submit that claims 5-11 and 18 - 24 are allowable at least by virtue of their dependency from independent claims 1, 12, 13, 14, 25, and 26. Applicants further submit that Iida is not relied upon in the Office Action to remedy the above-identified defects in the teachings of Komatsu and Yamada, nor can it properly be relied upon for this purpose. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

CONCLUSION

In view of the above remarks, it is believed that the claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application; the Examiner is respectfully requested to contact Naphtali Y Matlis, Reg. No. 61,592 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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